

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of:

Hiroshi WATANABE, et al.

Serial No.

Group Art Unit:

Confirmation No.

Filed: October 31, 2003

Examiner:

For: CONTROLLER OF INJECTION MOLDING MACHINE

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

Before examination of the above-identified application, please AMEND same, as follows:

**IN THE CLAIMS:**

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims in accordance with the following:

1. (ORIGINAL) A controller of an injection molding machine for controlling a back pressure and retreating a screw or a plunger up to a set metering completion position while rotating the screw at a set rotational speed, comprising:
  - means for advancing or retreating the screw or plunger;
  - means for rotating the screw;

means for detecting the position of the screw or plunger;

means for detecting a resin pressure;

back pressure feedback control means for controlling the means for advancing or retreating the screw or plunger so that a detected resin pressure coincides with a set resin pressure;

means for stopping the back pressure feedback control by the back pressure feedback control means when the screw or plunger reaches a set change point before the screw or plunger reaches a metering completion position and moving the screw or plunger up to the metering completion position; and

means for reversing the screw when the screw or plunger reaches the set change point.

2. (ORIGINAL) The controller of an injection molding machine according to claim 1, wherein the set change point is determined by a preset position of a screw or plunger.

3. (ORIGINAL) The controller of an injection molding machine according to claim 1, further comprising time measuring means for measuring the elapsed time since start of metering, wherein the set change point is determined by the timing at which the time measuring means measures a preset time.

4. (ORIGINAL) The controller of an injection molding machine according to claim 1, further comprising means for detecting a screw rotating torque, wherein the set change point is determined by the timing at which it is detected that the present torque reaches a preset screw rotating torque.

5. (ORIGINAL) A controller of an injection molding machine for controlling a back pressure and retreating a screw or a plunger up to a set metering completion position while rotating the screw at a set rotational speed, comprising:

means for advancing or retreating the screw or plunger;

means for rotating the screw;

means for detecting the position of the screw or plunger;

means for detecting a resin pressure;

back pressure feedback control means for controlling the means for advancing or retreating the screw or plunger so that a detected resin pressure coincides with a set resin

pressure;

means for stopping the back pressure feedback control by the back pressure feedback control means when the screw or plunger reaches a set change point before the screw or plunger reaches a metering completion position and moving the screw or plunger up to the metering completion position; and

means for reversing the screw when a preset screw or plunger retreat speed is detected by the means for detecting the retreat speed of the screw or plunger.

6. (ORIGINAL) A controller of an injection molding machine for controlling a back pressure and retreating a screw or a plunger up to a set metering completion position while rotating the screw at a set rotational speed, comprising:

means for advancing or retreating the screw or plunger;

means for rotating the screw;

means for detecting the position of the screw or plunger;

means for detecting a resin pressure;

back pressure feedback control means for controlling the means for advancing or retreating the screw or plunger so that a detected resin pressure coincides with a set resin pressure;

means for stopping the back pressure feedback control by the back pressure feedback control means when the screw or plunger reaches a set change point before the screw or plunger reaches a metering completion position and moving the screw or plunger up to the metering completion position; and

means for reversing the screw when a resin pressure exceeding a preset resin pressure is detected by resin pressure detecting means.

7. (CURRENTLY AMENDED) The injection molding machine according to claim 1, 5, or 6, wherein the means for reversing a screw reverses the screw by a set rotation amount at a preset rotational speed.

8. (ORIGINAL) The injection molding machine according to claim 7, wherein the means for reversing a screw reverses the screw at multistage by changing the present rotational speed to each set rotational speed in accordance with the rotation amount of the screw.

9. (CURRENTLY AMENDED) The injection molding machine according to claim 1, ~~5, or 6~~, wherein the means for reversing a screw reverses the screw for a set predetermined time at a preset rotational speed.

10. (ORIGINAL) The injection molding machine according to claim 9, wherein the means for reversing a screw reverses the screw at multistage by changing the present rotational speed to each set rotational speed in accordance with the elapsed time since start of metering.

11. (CURRENTLY AMENDED) The injection molding machine according to claim 1, ~~5, or 6~~, wherein the means for reversing a screw reverses the screw for a set predetermined time at a preset torque.

12. (ORIGINAL) The injection molding machine according to claim 11, wherein the means for reversing a screw reverses the screw at multistage by changing the present torque to each set torque in accordance with the elapsed time since start of metering.

13. (CURRENTLY AMENDED) The injection molding machine according to claim 1, ~~5, or 6~~, wherein the means for reversing a screw reverses the screw by a set rotation amount at a preset torque.

14. (ORIGINAL) The injection molding machine according to claim 13, wherein the means for reversing a screw reverses the screw at multistage by changing the present torque to each set torque in accordance with the rotation amount of the screw.

15. (CURRENTLY AMENDED) The injection molding machine according to claim 1, ~~5, or 6~~, wherein the back pressure feedback control means commands a retreat distance of the screw or plunger so that a detected resin pressure coincides with a set resin pressure.

16. (CURRENTLY AMENDED) The injection molding machine according to claim 1, ~~5, or 6~~, wherein the back pressure feedback control means commands a retreat speed of the screw or plunger so that a detected resin pressure coincides with a set resin pressure.

17. (CURRENTLY AMENDED) The injection molding machine according to claim 1, ~~5, or 6,~~ wherein the back pressure feedback control means commands a torque for retreating the screw or plunger so that a detected resin pressure coincides with a set resin pressure.